

Article

# Twice-Exceptional Children and Their Challenges in Dealing with Normality

Roya Klingner

The Global Center for Gifted and Talented Children, 81379 Munich, Germany; info@gcgtc.com

**Abstract:** This article defines the term twice-exceptional as being gifted (highly able) and having challenges with learning or physical disabilities. The focus is on understanding these children, who are brilliant in one way but at the same time in some situations are at risk. The biggest challenges they face are misunderstanding and misdiagnosis. This article will assist those involved in the life and education of twice-exceptional children to help light the way towards better understanding them, focusing on their strengths and supporting them individually to change their life in an optimal direction. One million of our nation's most promising, innovative thinkers—children who learn differently, not “deficiently”—constitute a neglected national resource.

**Keywords:** gifted education; psychology; twice-exceptional; animal-assisted therapy; positive psychology

## 1. What Does It Mean to Be a Twice-Exceptional Child?

One definition of twice-exceptional children includes children who are identified as gifted but demonstrate evidence of one or more disabilities. One might ask, how could someone be gifted but have disabilities? In a performance-oriented education system, it is unfortunately difficult to believe. Some educators argue that gifted students cannot also have disabilities or special needs. Unfortunately, there is no consensus among educators and psychologists for a comprehensive definition of gifted.

## 2. Who Is Gifted?

In Germany and some other countries, we define a child as gifted when the IQ is higher than 130 but being gifted is more than just having a high IQ. In our center, The Global Center for Gifted and Talented Children, we call a child Gifted when the IQ and creativity are both high. In addition, we use a behavior checklist for Highly Gifted Children and several interviews with the child, their parents, and teachers for additional important information for the identification process. In some cases, we noticed that gifted children with high IQs have disabilities in reading, Asperger's, Autism, ADHD, and more. We call these children 2e.

Some students with learning disabilities have considerable strengths in comparison with their areas of weakness [1]. Such students are called twice-exceptional [2]. This was the first mention of that term to describe students who were gifted and displayed learning disabilities at the same time. However, even today, many psychologists still have a problem with diagnosing gifted or 2e children. They tend to focus on performance or just on an IQ score. This leads to misdiagnosis and can change a child's life. There are many definitions of twice-exceptionality, and the views of two educators, Sally Reis and Alexinia Baldwin, will be briefly examined.

Twice-exceptional learners are students who demonstrate the potential for high achievement or creative productivity in one or more domains such as math, science, technology, the social arts, the visual, spatial, or performing arts or other areas of human productivity AND who manifest one or more disabilities as defined by federal or state eligibility criteria [3]. These disabilities include specific learning disabilities, speech and language disorders, emotional/behavioral disorders, physical disabilities, Autism Spectrum



**Citation:** Klingner, R.

Twice-Exceptional Children and Their Challenges in Dealing with Normality. *Educ. Sci.* **2022**, *12*, 268. <https://doi.org/10.3390/educsci12040268>

Academic Editors: Dorothy Sisk and Jacobus G. Maree

Received: 17 January 2022

Accepted: 23 March 2022

Published: 11 April 2022

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Disorders (ASD), or other health impairments, such as Attention-Deficit/Hyperactivity Disorder (ADHD). These disabilities and high abilities combine to produce a unique population of students who may fail to demonstrate either high academic performance or specific disabilities. Their gifts may mask their disabilities, and their disabilities may mask their gifts [3].

Identification of twice-exceptional students requires comprehensive assessment in both the areas of giftedness and disabilities, as one does not preclude the other. Identification, when possible, should be conducted by professionals from both disciplines and, when at all possible, by those with knowledge about twice-exceptionality in order to address the impact of coincidence/comorbidity of both areas on diagnostic assessments and eligibility requirements for services.

Educational services must identify and serve both the high achievement potential and the academic and social-emotional deficits of this population of students. Twice-exceptional students require differentiated instruction, curricular and instructional accommodations or modifications, direct services, specialized instruction, acceleration options, and opportunities for talent development that incorporate the effects of their dual diagnosis.

Twice-exceptional students require an individual education plan (IEP) or a 504-accommodation plan with goals and strategies that enable them to achieve at a level and rate commensurate with their abilities. This comprehensive education plan must include talent development goals, compensation skills, and strategies to address their disabilities and their social and emotional needs.

Twice-exceptional children are also defined as students showing evidence of exceptional ability and disability, which results in a unique set of circumstances [4]. Their exceptional ability may dominate, hiding their disability, or their disability may dominate, hiding their exceptional ability. Each may mask the other so that neither is recognized or addressed. Twice-exceptional students may perform below, at, or above grade level, and they require the following:

- Specialized methods of identification that consider the possible interaction of the exceptionalities;
- Enriched/advanced educational opportunities that develop the child's interests, gifts, and talents while also meeting the child's learning needs;
- Simultaneous support that ensures the child's academic success and social and emotional well-being, such as accommodations, therapeutic interventions, and specialized instruction;
- Working successfully with this unique population requires specialized academic training and ongoing professional development.

### 3. How Can We Recognize the Twice-Exceptional Learner?

Parents are the first contacts of the 2e children, and they recognize their gifts, potential, talents, and disabilities as well. The 2e children have two seemingly paradoxical sets of behaviors: high cognitive and creative abilities, as well as those associated with their particular challenge area. Typical gifted behaviors include [5–10]:

- Sense of humor;
- Unusual alertness early in life;
- Strong long-term memory and short-term memory;
- Rapid learning and quick thinking;
- Large vocabulary and complex sentence structure for their age;
- Longer attention spans, persistence in subjects in which they are interested;
- Highly developed curiosity and asking limitless questions;
- Imaginary playmates and vivid imaginations;
- Wide range of interests;
- Experimentation and doing things differently;
- Unusual emotional depth, intense feelings, and reactions;
- Sense of idealism and justice at an early age;

- Impatience with self or others;
- Talents in distinct domains, such as the arts, design, technology, robotics, writing, mathematics;
- Self-teaching in reading and writing;
- Putting ideas or things together in ways that are unusual or not obvious (divergent thinking);
- Enjoyment of solving problems;
- Self-criticism and perfectionism;
- These behaviors make them different from children of the same biological age;
- Typical disabilities diagnoses of 2e are
- SLD (Specific Learning Disabilities);
- ADHD (Attention-Deficit/Hyperactivity Disorder);
- ODD (Oppositional Defiant Disorder);
- GAD (Generalized Anxiety Disorder);
- ASD (autism spectrum disorder).

#### 4. Misdiagnoses and Missed Diagnoses

Some experts in gifted education contend that misdiagnoses stem primarily from the widespread ignorance among otherwise well-meaning and well-trained professionals about the social and emotional characteristics of gifted children and adults; as many as half of gifted students with the diagnosis of ADHD are misdiagnosed [11].

In addition to misdiagnosis, there is the risk of a missed diagnosis. In Germany, many psychologists focus only on performance and IQ results of tests, but this can lead to a wrong diagnosis. In some situations, the student is not recognized or identified as gifted because the disability serves to overshadow the intellectual or academic gift. In other situations, the student is identified as gifted but not diagnosed as having a coexisting disability because the advanced intellectual or academic abilities camouflage the disability. In both situations, students are denied much-needed special services or programs as their twice-exceptional status goes unrecognized [12].

With time, the difficulties 2e students may have can cause them to fall behind academically, become highly anxious and depressed, and even drop out of school. This situation can lead to a downward spiral causing them to shut down, act out, or give up [5,13,14].

#### 5. Brief Descriptive Summaries of Selected 2e Students

In the last 13 years of working with gifted children and particularly with 2e children in the Global Center for Gifted and Talented Children, we have had many 2e clients, and some of their cases will be shared here (and whose real names have been changed). Bulleted lists look like this:

##### 5.1. Noel

Noel's mother contacted us and shared the following situation: Noel had problems in kindergarten and school, fewer social skills than other children, and less empathy towards other children. Because of his behavior and aggression, the school sent him to a psychiatrist. He diagnosed him with ADHD and Asperger's. When we met Noel, he was very rude and disrespectful to his mother during the consulting session. He had no friends in school and hated school. We tested him and noticed that he was highly gifted. His IQ was higher than 145. He had problems with noise, light, and many other things. The solution we planned together with his parents was to move him from a public school to a private school with a program for gifted children with some disorders. In a small group of children and a school program supportive of individual needs, Noel's behavior changed extremely fast in a good direction. He changed his nutrition and daily program too. Some activities such as sport and interest-based learning helped Noel to be more focused on his strengths. The situation improved for him and his family.

### 5.2. *Tina*

Tina was misdiagnosed in a university setting as gifted because of her high IQ. In the afterschool program (Hort), she always fought with other children, refused to accept the rules, hated homework, and never made eye contact when someone talked to her. Our diagnosis was Asperger's/Autism, which was not accepted by her mother. She was unable to believe that the University had made a mistake. We were unable to solve the problem because her mother refused to accept the fact that Tina was a 2e child.

### 5.3. *Mike*

Mike showed aggression in school, and the principal recommended that his parents contact us. His mother was crying during the consulting session, and he showed no empathy or any reaction to her distress. When we asked him if he liked his mother, he did not answer. In school, he always fought with other children, and sometimes his teachers and classmates were unable to control him. He could not explain his emotions or show them. In some areas, he was very good at creating objects or informatics. The diagnosis was 2e with Autism. We contacted his school and his teachers and gave them some suggestions on how to help Mike. He slowly learned to deal with normality and learned about emotions and empathy. The individual support at home and in his school helped him a lot.

### 5.4. *Tom*

Tom's mother contacted us and asked us to help her son, who had been diagnosed as an ADHD child. The result of the test showed that his IQ and creativity were very high. When asked to tell about his situation at home, we noticed that his mother pressured him to learn the piano, which he hated a lot. He loved percussion. All his problems were based on this situation that made him unhappy and the fact that he could not tell his mother what he wanted. When we tried to find a solution together with his mother, the situation improved, and there was no more sign of ADHD. He stopped his piano lessons, went to a drawing class because he loved art, and he was very good at it. Everything became better in a very short time after the family understood him and his needs.

## 6. How Can We Help Twice-Exceptional Children?

Parents are the first important contact to support a 2e child by laying the foundation of how the child expects to interact with the world, and by setting a strong example, the parent can help lead the child toward their full developmental potential. Many twice-exceptional children have problems with finding friends, and parents may consider ways of filling the peer gap for their child. It is important to help 2e children develop self-esteem and focus on strengths rather than disabilities.

Many teachers in Germany have never learned about gifted children or twice-exceptional children. They think that to be gifted means to be a high performer. How can they understand a 2e child with high IQ or high creativity but who experiences challenges with learning? In addition, the education system is highly focused on helping children with handicaps rather than focusing on talents or potential. It is important to change situations such as this in many countries and start with teacher training, workshops for parents, and creating organizations for parents of twice-exceptional children to share their experiences and learning with each other. The focus needs to be more on the solution rather than dealing with all the problems. Creativity and flexibility, and thinking in a positive direction, can help parents and educators to learn how to support gifted and twice-exceptional children. Being a twice-exceptional child is frustrating sometimes when they understand that they are different. In some cases, this might even lead to suicide (Webb et al., 2015). Yet, even though having a 2e child might be particularly challenging, sometimes it has a beautiful side as well if we try to find it and think positively.

## 7. How Can We Help Twice-Exceptional Children?

In the Global Center for Gifted and Talented Children, we use different kinds of methods to help gifted and twice-exceptional children:

- Solution-Oriented Therapy and Positive Emotions;
- Art Therapy;
- Animal-Assisted Therapy

## 8. Solution-Oriented Therapy

We have been inspired by the methods of Steve de Shazer and his wife Insoo Kim Berg's Solution-Focused Brief Therapy. We have always been interested in finding ways to support families and children with special needs. De Shazer and Berg said problem talk creates problems, but solution talk creates solutions [15]. At the highest level, there are three key principles to working in a solution-focused way [15].

### 8.1. "If It Ain't Broke, Don't Fix It"

By broke, we mean somebody in the organization is dissatisfied and wants something to be different. If this is the case, we start to work with the people who want something different and are prepared to do something about it—not the others (who may be ambivalent or who do not see any need for improvement).

### 8.2. Once You Know What Works, Do More of It

When the solution is happening already, whether spontaneously, by accident, or even only in part, we have priceless knowledge and should do more with it.

### 8.3. If It Is Not Working, Do Something Different

Although we usually make progress by using principle 2, just occasionally, something else is required. It sounds simple, does it not? And it is. However, simple is not the same as easy, and we are still surprised by the lure problem talk holds for those who want differences in their lives and organizations and for those whose job it is to help find them. We found that this method helps parents and children focus on solutions and keeps them working on them. In a positive thinking environment, one can be more creative and come up with solutions.

## 9. Broaden-and-Build Theory

The foundational research of Fredrickson led her to develop a theory on positive emotions called the broaden-and-build theory [16]. The substance of this theory lies in the notion that positive emotions play an essential role in our survival. Positive emotions, such as love, joy, and gratitude promote new and creative actions, ideas, and social bonds. When people experience positive emotions, their minds broaden, and they open up to new possibilities and ideas. At the same time, positive emotions help people build their well-being resources, ranging from physical to intellectual and social resources [16]. The building part of this theory is tied to the findings that these resources are durable and can be drawn upon later on, in different emotional states, to maintain well-being. The theory suggests that negative emotions serve the opposite function of positive ones. When threatened with negative emotions such as anxiety, fear, frustration, or anger, the mind constricts and focuses on the imposing threat (real or imagined), limiting one's ability to be open to new ideas and build resources and relationships. Fredrickson draws on the imagery of the water lily to beautifully illustrate her theory by saying:

*"Just as water lilies retract when sunlight fades, so do our minds when positivity fades".*

(Fredrickson 2009, p. 55)

Solution-oriented therapy and positive thinking help many of our clients to find an optimal way to deal with their situations and find a perfect solution.

## 10. Art Therapy

Art therapy is another good method to help families and gifted children deal with problems and solve them. *Creativity in Gifted Children* describes the importance of the development of creativity and the use of Art therapy for gifted or twice-exceptional children [17]. Silverman reported from her research that more than 80% of gifted children are visual-spatial learners, and the use of their visual and spatial skills in art therapy is an excellent strategy for parents and educators [10]. Gifted children are often creative as well as intellectually capable and seem to find visual art a comfortable medium for working out some of the things that trouble them.

The physical act of drawing, painting, chipping away stone, weaving fabric, and spinning the wool is therapeutic and releases anxieties and reduces stress which, when denied outlets, can become blocks to healthy emotional development. At the same time, the freedom of artistic expression is a well-received change for gifted students, who are often under pressure to achieve intellectually in a standardized curriculum. Art is one way in which we can guide gifted children toward reconciling and integrating their inner and outer conditions, the realities, and myths of themselves, in a nonverbal language unique to them [18].

Spinning the wool trains concentration, develops fine motor skills, and increases a level of relaxation.

## 11. Animal-Assisted Therapy

Learning about animal-assisted therapy (AAT) was one of the best ideas we have had in the Global Center for Gifted and Talented Children, GCGTC. We have trained sheep and alpacas to help gifted and twice-exceptional children. (Figures 1 and 2)



**Figure 1.** Spinning the wool (picture used with parental consent).



**Figure 2.** Senija, the trained alpine stone sheep with our client, a gifted boy (picture used with parental consent).

### 12. What Is Animal-Assisted Therapy?

Animal-Assisted Therapy uses animal companions and trained animals to help people recover from health problems or manage certain medical conditions. AAT aims to improve a person's quality of life through the comfort and enjoyment of spending quality time with animals. Assisted-therapy animals typically work with physical or occupational therapists to help people reach specific goals.

### 13. What Children Can Benefit from AAT?

Animal-Assisted Therapy is useful for children with a wide range of physical, emotional, and mental disabilities. Animal-assisted therapy has proven helpful for children with the following conditions:

- Autism spectrum disorder;
- Asperger–Autism;
- Behavioral disorders;
- Cerebral palsy;
- Intellectual or developmental disabilities;
- Muscular dystrophy;
- Post-traumatic stress disorder;
- Traumatic brain injuries;
- ADHD

### 14. Benefits of AAT for Gifted and Twice-Exceptional Children

Research shows that animals have the natural ability to improve our mood, lower our blood pressure, and provide a pleasurable rush of feel-good chemicals; for children with special needs, animals play an incredibly important role [19,20]:

- Animals are naturally trusting;
- They do not judge us, humans, by our disabilities or gifts, talents, or abilities;
- Animals can pace our inner mood and energy very well;
- Animals reduce stress and help us to deal with anxiety;
- A number of skills can be improved during animal therapy sessions;
- The presence of animals in therapy provides psychological, emotional, social, and physical benefits;
- AAT increased relaxation, self-esteem, and self-confidence;
- Animals help gifted children with depression;
- Improve joint movement;
- Reduce or alleviate pain;

- Hone fine motor skills;
- Improve independent or assisted movement;
- Promote greater emotional stability;
- Reduce the feeling of isolation or loneliness;
- Increase the feeling of security, trust, happiness, and hope;
- Increase empathy, compassion, and nurturing;
- Improve verbal and nonverbal communication skills.

### 15. Research on the Use of Animal-Assisted Therapy

Charry-Sánchez, Pradilla, and Talero-Gutiérrez examined 26 studies with children: 10 with cerebral palsy, 9 with Autism, 2 with Down syndrome, 3 in pain, and 2 in other conditions. They found, using qualitative analysis, that a small but significant contribution was made by ATT in the management of these conditions [21].

Dalien described the results of research in which it was found that animals have the natural ability to improve mood, lower blood pressure, and provide a pleasurable rush of good chemicals in children with special needs. The author said that for a child with special needs, relationships might be hard to develop, which is why animals can work their special magic without the child knowing. Animals are naturally trusting and want to be accepted, just as children do, and do not judge us, humans, by our disabilities or limitations. Dalien said a few hours a day or week with an animal could do wonders for a child with special needs [19].

Carrie Borzillo shares Dr. Lesli Preuss' amazing story in the Samaritan Magazine of how her dog grabbed at her neck, and after taking him to the vet for anger management, the vet suggested she check with her doctor since the dog may have intuited something was wrong. Preuss found she had a tumor in her neck. This is a powerful example of the connection between animals and humans that can save lives. Preuss' research includes working with children with ADHD and Gifted and Asperger's at her ranch for animal therapy. The United Disabilities Service (UDS) found that animal therapy reduces anxiety, provides motivation, and brightens spirits. Jaimie Bott, a Special Education Supervisor of Mechanicsburg School district in Lancaster, PA, USA, said no one plays alone, the service dogs find someone alone at recess and play with them, and the dogs greet the students as they come into the school, setting a warm, friendly start of the day. The dogs they have in four schools were trained and provided by UDS [22].

In her thesis on the benefits of animal-assisted therapy with Children in Special Education at Bethel University, Erica Dolsey-Bugenhagen described how the presence of an animal motivated and encouraged one student to be creative and innovative [20]. For the first time, this student was able to create a project and complete it. Follow through and completion were problems for this student and with ATT, he created a running course for a rabbit, and his emotional meltdowns decreased.

What animals are used in animal-assisted therapy for Children? Dogs are the most often used animals for AAT, but a variety of other animals are also used, including:

- Cats;
- Pigs;
- Rabbits;
- Birds;
- Fish;
- Llamas;
- Alpacas;
- Horses;
- Dolphins;
- Goats;
- Sheep

## 16. Why Select Alpacas and Llamas for ATT?

It is well documented that holding and stroking animals can reduce blood pressure, lower pulse rates, and alleviate feelings of tension and anxiety [21]. Animals offer attention and unconditional acceptance; they are responsive, live in the 'here and now', and do not mind who you are or what you look like.

Alpacas and llamas are intelligent and inquisitive but can also be reticent with humans who fail to give adequate consideration to their needs. They are usually direct and honest, but unlike humans, they are nonjudgmental and do not confuse verbal communications. So, they are ideal for working with people who find themselves confused or threatened by human relations, and many clients report they feel safer and less threatened by animals. Being with animals can encourage nurturing and empathic traits, and for survivors of abuse, they offer an opportunity for safe touch. Benefits of positive interactions between people and alpacas and llamas are likely to include:

- Development of relationships and emotional bonds built on trust and respect;
- Improved mood, morale, and sense of self-worth;
- Better social interaction, reducing feelings of social isolation;
- Relief from anxiety and stress (slower heart rate and lower blood pressure);
- Learning new skills—nurturing and caring for animals appropriately;
- Self-esteem and confidence building.

Working alongside alpacas and llamas offers a different way of exploring difficult and sensitive issues as clients may find it easier to express their feelings and recount painful experiences.

Where clients are suffering from depression, research indicates the animals also have the potential to draw the person out of themselves, either by watching, stroking, or speaking to the animals, so they focus less on themselves and more on their external environment. So rather than thinking and talking about themselves and their problems, they watch and talk to (and about) the animals, changing the focus of interest and gaining positive attention, as well as pleasure in handling them. <https://simplyalpaca.co.uk/therapy/details.aspx?positionId=113> (access on 12 December 2021). Figures 3 and 4 show some examples of children with therapy animals.



**Figure 3.** Alpacas helped a twice-exceptional boy with ADHD to be calm (picture used with parental consent).



**Figure 4.** Gifted boy with llama, Qallas, hiking in the forest (picture used with parental consent).

## 17. Summary and Conclusions

The concept of twice-exceptionality can be a challenge for schools, families, and the students themselves. However, this article outlined several considerations to ensure that the needs of 2e students are met in the school environment. When teachers acknowledge the strengths of the student before addressing their areas of need, there is a higher likelihood of success for the student. If teachers provide access to challenging content in multiple ways, 2e students may be more engaged. Additionally, acknowledging that 2e students have unique social and emotional needs and finding ways to help them navigate social situations in the school setting is critical for their long-term success [3].

Collaboration can help classroom teachers decipher between 2e students and gifted underachievers. Once their needs are identified, the students can be supported when special educators, gifted support personnel, and families exercise collaboration [23]. Considering a collaborative approach to meet the unique needs and strengths of each 2e student maximizes their opportunities for success in the school environment.

By understanding their own talents, 2e children build self-confidence, create positive identities, and find like-minded friends. These are essential strategies for coping with their challenges, finding their path in life, and being able to pursue their dreams. To meet the needs of these children, there must be a paradigm shift from a remediation or deficit model to a strength-based model of education. This is particularly true as a growing body of research demonstrates that learning disabilities coexist with unique learning strengths. These children need programs and schools that transform the research on twice-exceptionality into a daily commitment to combine academic rigor with individualized accommodations and adaptations.

Twice-exceptional children need individual support based on their individual needs and requirements. It is important to recognize their problems and work on solutions together with their parents and school, teachers, and educators. Animal-assisted therapy cannot stand on its own but is a complement to art therapy, coaching, and the development of plans. In our experience at our Global Center, we support the strengths of 2e children, which help to improve their well-being, show their potential, and help them to deal with normality without depicting them as weak links of society. Twice-exceptional children need an education that fits their needs, and it is in all our interests to provide it.

**Funding:** This research received no external Funding.

**Institutional Review Board Statement:** Ethical review and approval were waived for this study, due to examples being taken directly from actual cases.

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Conflicts of Interest:** The author declares no conflict of interest.

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